TILA M. PÉREZ[1] & WARREN T. ATYEO[2]

[1]*Laboratorio de Acarología, Universidad Nacional Autónoma de México*
[2]*Department of Entomology, University of Georgia*

NEW TAXA OF FEATHER MITES (ACARINA, PTEROLICHIDAE) FROM MEGAPODES (AVES, MEGAPODIIDAE)

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Ascetolichus gen. n. (Pterolichoidea, Pterolichidae) is established for the type species *Pterolichus* (*Pseudalloptes*) *palmiger* Trouessart and two new species, *A. microthrix* and *A. ruidus*. All hosts are Megapodiidae.

Correspondence: W. T. Atyeo, Department of Entomology, University of Georgia, Athens, Georgia 30602, U.S.A.

Key words. – Feather mites, Pterolichidae, *Ascetolichus*, Megapodiidae parasites.

In the late 1800s and early 1900s E. L. Trouessart, often in collaboration with other authors, named many taxa of feather mites taken primarily from study skins in ornithological collections in Paris and Angers. His collections included mites from three species of Megapodiidae: '... les Talégalles (*Talegallus Cuvieri* et *Aepipodius Bruijnini*) de Nouvelle-Guinée' and '... le Mégapode de Jobi (*Megapodius Jobiensis*) de île Jobi (Nouvelle-Guinée).' From these hosts, Trouessart (1887) and Trouessart & Neumann (1888) described seven mite species, however, the location of most of the types is unknown. By examining megapode study skins we have recovered the seven species of Trouessart plus many new species.

From this rich and diverse acarofauna, we will establish herein a new genus for one of seven Trouessart species and two new species.

MATERIALS AND METHODS

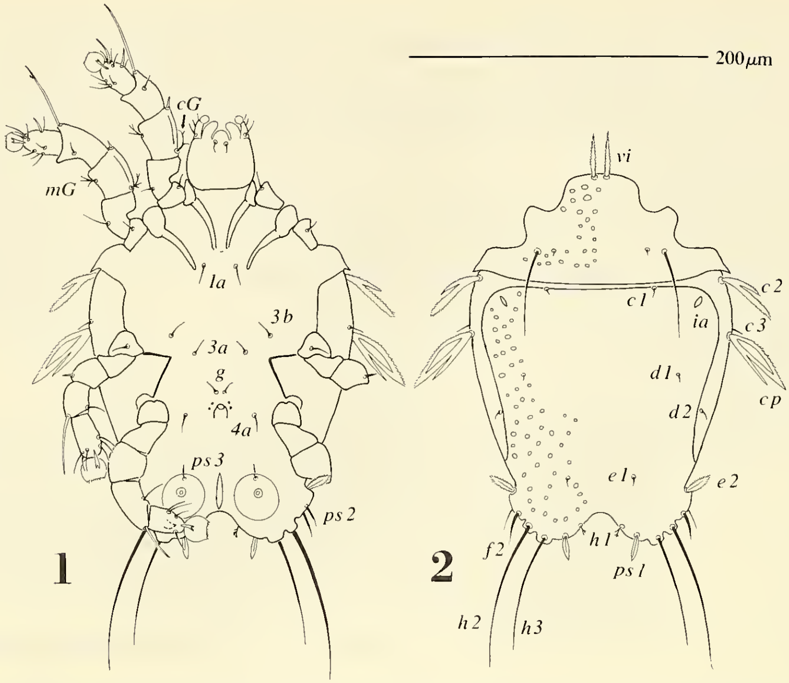
We have examined 54 collections of feather mites from 95 museum study skins of megapodes at the American Museum of Natural History (see Atyeo & Braasch 1966 for collecting technique). These mites are from 13 of the 19 megapode species as recognized by White & Bruce (1986). Each collection contains all mite specimens taken from an individual skin, but the specimens may include only a portion of the species known from the host species (see Méjia-González & Pérez 1988 for limitations of the collecting technique). The megapode species examined followed by the number of samples taken and the number of skins examined are given in table 1. Names denoted by asterisks are hosts from which species of the new genus were collected.

All taxa being described, regardless of the sample size, are believed to be from the Megapodiidae as we have never encountered similar forms in any of our extensive collections from the birds of the world.

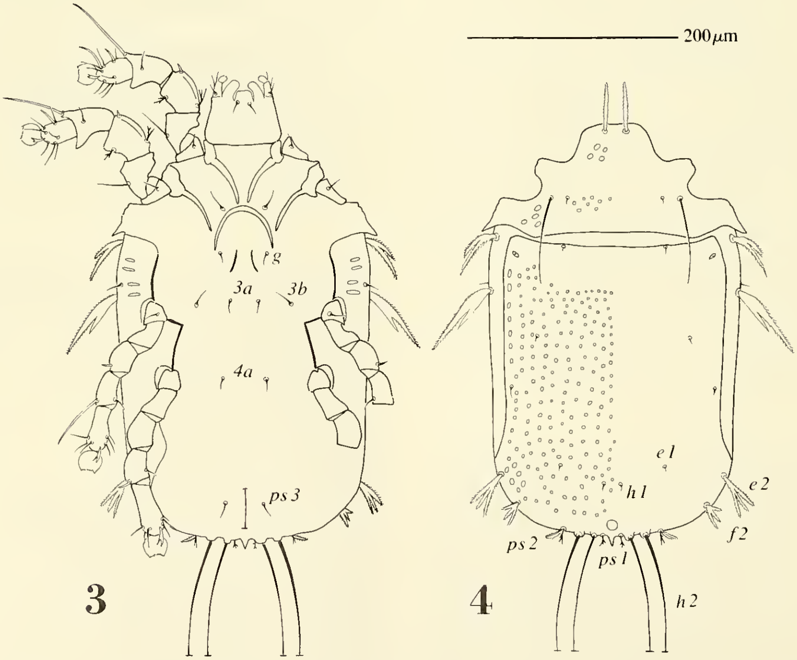
Signatures for idiosomal setae follow the Grandjean system as modified by Griffiths et al. (1990).

Table 1. The number of feather mite collections (left number) obtained from museum study skins examined (right number) of megapodes. Asterisks indicate hosts of *Ascetolichus* species.

Megapodius freycinet Gaimard, 1823	11 of 15
M. eremita Hartlaub, 1867	3 of 4
M. affinis A. B. Meyer, 1874	
(= *decollatus* Oustalet, 1878)	1 of 3
(= *jobiensis* Oustalet, 1881)	3 of 5
M. laperouse Gaimard, 1823	9 of 14
M. pritchardii G. R. Gray, 1864	0 of 10
M. (= *Eulipoa*) *wallacei* G. R. Gray, 1860	5 of 7
Leipoa ocellata ocellata Gould, 1840	1 of 1
L. ocellata rosinae Mathews, 1912	0 of 2
Alectura lathami J. E. Gray, 1831*	2 of 11
Talegalla cuvieri Lesson, 1828	3 of 3
T. jobiensis jobiensis A. E. Meyer, 1874*	4 of 5
T. fuscirostris Salvadori, 1877	4 of 5
Aepypodius arfakianus (Salvadori, 1877)*	3 of 4
A. bruijnii (Oustalet, 1880)*	2 of 2
Macrocephalon maleo S. Müller, 1846	3 of 4



Figs. 1-2. *Ascetolichus palmiger* (Trouessart). Ventral and dorsal aspects of male. Setal signatures follow Griffiths et al. (1990).



Figs. 3-4. *Ascetolichus palmiger* (Trouessart). Ventral and dorsal aspects of female. Setal signatures follow Griffiths et al. (1990).

Measurements, in micrometres, are the mean ± standard error (when N>10), followed in parentheses by the observed limits and number of observations. The SEM micrographs were taken with a Philips 505 using dehydrated specimens collected from museum study skins.

Holotypes of new species will be deposited in the American Museum of Natural History. Abbreviations for other type repositories and accession numbers of bird and mite collections are: AMNH, American Museum of Natural History, New York; TRT, Trouessart Collection, Paris; and UGA, University of Georgia, Athens.

Ascetolichus Pérez & Atyeo, gen. n.

Diagnosis. – Small pterolichine mites with quadrate idiosoma and gnathosoma; well-developed dorsal shields; posterolateral angles of propodosoma extended into points; all idiosomal and leg setae present; setae vi expanded, minutely branched; setae c2, cp large, branched; setae c3 minute, ventrolateral; cupules ia conspicuous; epimerites I free; legs subequal; legs III, IV ventral; pretarsi symmetrical, dentate; tarsi I and II shorter than corresponding tibiae; genua I, II, tibiae I, II with dorsal crests or pebbled surfaces; bases of solenidia σ, φ respectively elevated above tibiae, tarsi; genua I, II with setae mG bi- or trifurcate. Male idiosoma with shallow terminal cleft on which is inserted leaflike ps1 and branched h1; setae e2 ovate, fringed; adanal discs small, about 8 in diameter, edentate; tarsus IV with subterminal claw. Female with idiosoma parallel-sided, more or less truncated posteriorly; external spermduct present; various terminal setae elaborated (as in fig. 4); oviporus and associated structures anterior of sejugal furrow.

Type species. – *Pterolichus* (*Pseudalloptes*) *palmiger* Trouessart.

Etymology. – Contraction of *asketos* (Gr., curiously wrought, ornament) and *Pterolichus*, masculine.

Ascetolichus palmiger (Trouessart) comb. n.
(figs. 1-6, 8)

Pterolichus (*Pseudalloptes*) *palmiger* Trouessart, 1887: 116-7; Canestrini & Kramer 1899: 61.

Males. – Dorsal shields with small pits unequally distributed; genua I, II with ridges parallel to axis; genua I, II with setae mG, cG coarsely branched; setae cp long, bifurcate, unequal branches; measurements: length, including gnathosoma 279 ± 2 (262-290, 19), width 170 ± 1 (162-177, 19), sce:sce 86.5 ± 0.8 (78.4-92.1, 19), c2 length 46.2 ± 0.7 (39.2-49.0, 17), cp length 58.4 ± 0.7 (50.9-63.7, 19), h1 length 8.3 ± 0.2 (7.8-9.8, 18), ps1 19.6 ± 0.3 (17.6-21.6, 18), gnathosomal length 45.2 ± 0.4 (43.1-49.0, 19), gnathosomal width 46.9 ± 0.3 (45.1-49.0, 17).

Females. – Proterosoma as in male; dorsal hysterosoma with small pits, especially along margins; measurements: length, including gnathosoma 435 (424-463, 7), external spermduct about 13.7; width 230 (220-254, 7), sce:sce 120.4 (113.7-129.4, 7), c2 length 59.1 (54.9-66.6, 6), c3 length 87.1 (82.3-92.1, 6), e2 length 51.9 (50.9-54.9, 6), f2 length 22.7 (19.6-23.5, 7), ps1 14.8 (11.8-17.6, 7), ps2 23.3 (19.6-27.4, 5), gnathosomal length 65.8 (64.7-68.7, 7), gnathosomal width 69.2 (62.7-76.4, 7).

Type data. – From *Aepypodius bruijnii*: New Guinea, [Waigeu Island], lectotype ♂, paralectotype ♀ (TRT slide 37 A 1).

Material examined. – The type series (see Remarks) and other specimens from *Aepypodius bruijnii*: Indonesia: West Irian: Waigeu Island, 15 ♂, 4 ♀, circa 1894, A. A. Bruijn (AMNH 539411, UGA 5339; AMNH 539410, UGA 5340). From *A. arfakianus*; Indonesia: West Irian: Idenburg River, 6 km SW Bernhard Camp (39° 15'E, 3° 30'S), 1 ♂, 3 ♀, 21 February 1939, R. Archbold (AMNH 338429, UGA 5336); Snow Mountains, 3 ♂, 1 ♀, 24 September 1910, A. S. Meek (AMNH 539393, UGA 5337). From *Talegallus cuvieri*: New Guinea: no other data, 2 ♀ (TRT slides nos. 37 A 2, 22 H 16).

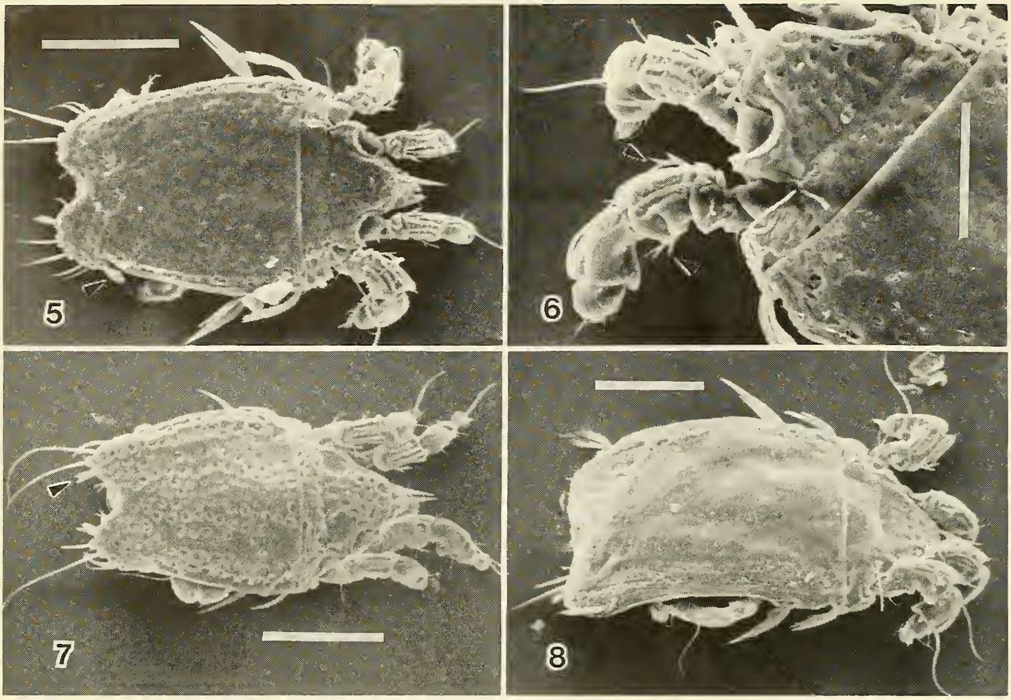
Remarks. – The number of observations for setae and gnathosomal measurements are small as many setae are lacking from the specimens and many gnathosomata have been deformed during specimen preparation. The measurements for the gnathosoma are included in this description only; they are similar for the other species for which there are few specimens.

Trouessart (1887) stated that the hosts for this species were *T. cuvieri* and *A. bruijnii*, New Guinea. Our collections from *A. bruijnii* are conspecific with Trouessart's specimens from the listed hosts (see above). We assume that Trouessart's two females from *T. cuvieri* represent accidental associations.

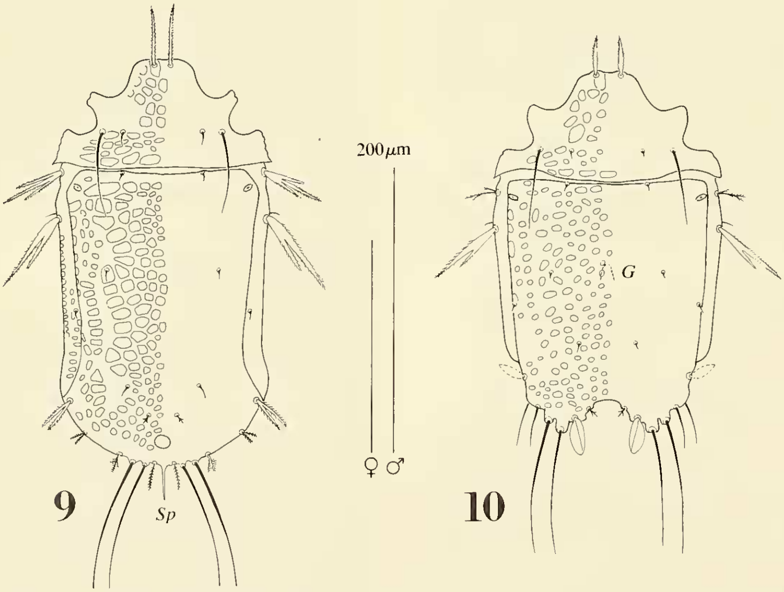
Ascetolichus species
(fig. 7)

One of the males used for SEM micrographs is an undescribed species (fig. 7) from the study skin of *Aepypodius arfakianus* from the Bernhard Camp (listed above). All males from the *Aepypodius* collections have been mounted and additional specimens were not found. Although the host association must be tentative until additional specimens are collected, it is possible that two species of *Ascetolichus* could occur on *A. arfakianus*. Two or three congeners on a single host, with each congener occuping a different microhabitat has been well documented (Atyeo & Pérez 1988, Méjia-González & Pérez 1988).

The species is related to *Ascetolichus palmiger* as



Figs. 5-8. SEMs of dorsal aspects of *Ascetolichus* species. – 5, *Ascetolichus palmiger*, male: arrow = setae e2; 6, *A. palmiger*, male propodosoma: upper arrow = setae cG, lower arrow = seta mG, genual ridges between setae; 7, *Ascetolichus* species, male: arrow = setae ps1; 8, *A. palmiger*, female. Scale bars: 5, 7, 8 = 100 μm; 6 = 50 μm.



Figs. 9-10. Dorsal aspects of *Ascetolichus* species. – 9, *A. ruidus* sp. n., female; 10, *A. microthrix* sp. n., male. G = position of male genital organ.

shown by the ridges on the anterior legs, but the dorsal ornamentation is different, setae c2 and cp are smaller, and setae ps1 are bifurcated.

Ascetolichus ruidus Pérez & Atyeo, sp. n.
(fig. 9)

Female (holotype). – Dorsal idiosoma with large, deep pits; genua I, II, femur II with antaxial surfaces pebbled; tibiae I, II with setae mG, cG thin, bi- or trifurcate; setae cp long, bifurcate, unequal branches; measurements: length, including gnathosoma 424, width 197, external spermduct 43.1, sce:sce 111.7, c2 66.6, cp 84.3, e2 39.2, f2 19.6, ps1 23.5, ps2 157.

Male. – Unknown.

Type data. – The holotype female was collected from *Alectura lathami*: Australia: Queensland: (?) Barron River, 19 July 1884, G. M. Mathews (AMNH 539322, UGA 5324). The holotype is deposited in AMNH.

Etymology. – From *ruidus* (Gr., rough) to refer to the rugose tegument of legs I and II.

Remarks – We have only two collections from *A. lathami* and in one, the unique holotype was found. Until validated by additional material, the host association is considered tentative.

Ascetolichus microthrix Pérez and Atyeo, sp. n.
(fig. 10)

Males (N=2). – Dorsal idiosoma with large pits; legs I, II without pebbled tegument or ridges parallel to axis; genua I, II with setae mG simple or with small basal branch; setae cp bifurcate, with few branches; measurements: length, including gnathosoma 280 (278-282), width 164 (162-166), sce:sce 95.1 (94.1-96.0), c2 length 29.4 (27.4-31.4), cp length 53.9 (49.0-58.8), h1 length 11.8 (11.8), ps1 27.9 (27.4-28.4).

Female (N=1). – Proterosoma and dorsal idiosoma similar to male; measurements: length, including gnathosoma 416, width 208, sce:sce 113.7, external spermduct 29.4, c2 31.4, cp 74.5, e2 23.5, f2, 16.7, ps1 13.7, ps2 11.8.

Type data. – From *Talegalla j. jobiensis*: Indonesia: West Irian: Humboldt Bay, Hollandia, holotype ♂, 1 ♂, 1 ♀ paratypes, 5 August 1928, E. Mayr (AMNH 539377, UGA 5332). The holotype is deposited in AMNH, paratypes in UGA.

Etymology. – From *mikros* (Gr., small) and *thrix* (Gr. seta) to refer to the small setae c2.

Remarks. – The two males in this collection had setae e2 missing; they have been represented with dotted lines as structures similar to those of *A. palmiger*.

The females of the two new species, *A. ruidus* and *A. microthrix* differ from those of *A. palmiger* by having long external spermducts. The female of *A. ruidus* differs from *A. microthrix* in having the pits of the hysterosomal shield approximately equal in size, a longer spermduct, and longer setae (especially c2, e2, ps1, compare measurements).

ACKNOWLEDGEMENT

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